FOOD ETHICS COUNCIL

Discussion paper

Food prices: The ethics of financial speculation

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1. Summary

Over the past few years rising food commodity prices and accompanying price volatility have become a significant political and economic issue around the globe. The impact on the world's poorest is devastating, with the 2007/8 food price crisis thought to have pushed over 40 million people into hunger (De Schutter, 2010, p2). After a brief respite following the 2008 crisis, prices increased rapidly again, with the index of international food prices compiled by the UN Food and Agriculture Organisation reaching an all time high in February 2011 (FAO, 2011a, p1). Although food commodity prices have subsequently fallen back somewhat, they remain relatively high and "extremely volatile" (FAO, 2011b, p1). This situation of high and rapidly fluctuating food commodity prices looks set to continue for years to come (FAO, 2011c, p12).

Although high and volatile food commodity prices affect everyone, they have a disproportionate effect on the poorest and most vulnerable. In developed countries the impact is moderated because food commodities tend to be a relatively small component of food retail prices, and because overall food purchases only constitute an average 10-15% of household spend (OECD, 2008, p8). Even so, the rising food prices are likely to have an impact on low income households. A report by the Joseph Rowntree Foundation in the UK found that recent increased hardship had been caused in part by the 2007/8 commodity price shocks in food and fuel (Hossain et al, 2011, p11). In developing countries, where the poorest households can spend 60 or 70% of income on food, often in the form of basic commodities, the impact is much greater (FAO, 2011c, p14). Most at risk are those in food importing countries reliant on basic food commodities purchased on international markets. The OECD estimates that a 10% increase in the price of cereals adds $4.5billion to the food import bill of net importing developing countries (OECD, 2010, p8).

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There is an ongoing and vigorous debate around the extent to which financial speculation in food commodity markets contributes to food price rises and price volatility. A joint report on food price volatility written for the G20 by a number of agencies including the FAO, IMF, UNCTAD, the World Bank and IFPRI illustrates the difficulty in forming a conclusive recommendation on this issue. They conclude that most analysts recognise that increased financial sector involvement in food commodity markets "*probably* acted to amplify short term price swings and *could have* contributed to the formation of price bubbles in certain circumstances" (FAO, IFAD et al, 2011, p12, *italics* added). This does not however constitute firm evidence that speculation is a determinant of price volatility and the recommendation of the report, recognising the extent of disagreement that remains, is for more research to assist regulators in assessing whether regulatory responses are required (FAO, IFAD et al, 2011, p22).

While the debate about speculation continues to rage, volatile food commodity prices continue to cause real suffering. Policy makers are divided on whether to take action, with Nicholas Sarkozy using France's presidency of the G20 in 2011 to promote greater regulation but with more sceptical governments such as the UK awaiting definitive proof that speculation causes harm before acting (Sarkozy, 2011a, 2011b; Hoban 2011). With resolution of the debate a long way off, the default position of taking no action while waiting for further evidence in a discourse that is already three years old seems inadequate. The purpose of this paper, then, is to look at what other approaches policy makers can consider when making decisions about speculation and food commodity markets.

Although centred on the impact of speculation, this debate is also a microcosm of a much larger and older discourse about social justice for the world's poor. That an estimated 925 million people are undernourished (FAO, 2010, p4) sits in sharp contrast to the financial activities undertaken by some of the wealthiest people in the developed world. This wider debate, although extremely important, is beyond the scope of this paper.

This paper suggests that the debate can be moved forward in three areas. Firstly, this can be done by investigating the burden of proof required before action is taken. In complex situations where definitive proof may never be provided, is the correct policy response always to stick to the status quo? A growing body of evidence suggests that speculation plays some role in food price volatility. Given the very real human suffering at stake, this paper suggests that adopting a more precautionary approach and limiting the extent of speculation is the prudent action to take.

Secondly the debate can be broadened from its narrow focus on whether or not speculation causes harm. What happens if we turn the question around the other way and ask whether speculation helps? Rather than considering whether speculation has a negative impact, can we assess whether speculation has a positive impact in terms of benefiting society as a whole? This paper concludes that while some speculation can provide what might be termed 'social value' by improving market liquidity and taking risk from other market participants, additional value is unlikely to be provided by the massive scale of speculation currently taking place in food commodity markets.

Finally the paper argues that the debate can be moved forward by recognising that speculation in food markets is not an isolated occurrence but part of a wider trend taking place in the economic system, a process of financialisation that has seen the financial services sector become increasingly dominant over other sectors of the economy. Financial interests are active across the food system, as investors in and owners of various food related organisations. Most relevant to the speculation debate is the increasing interest of investment funds in acquiring agricultural land for investment – so-called 'land grabbing'. The implications of this broader issue for the food system are beyond the scope of this paper. Suffice it to say that the global food system is unlikely to meet the needs of people, especially the most vulnerable people, if the driver of powerful interests within it is limited only to investment return.

In summary, given that speculation has the capability to cause harm, and has questionable value to society as whole, the paper recommends that policy makers support regulatory initiatives to impose limits to speculative activity in food commodities markets. If speculation is a significant cause of volatility this will save lives. If speculation is only a marginal cause, little of value will have been lost, and policy makers can focus on other causes of food price volatility.

The concepts of a precautionary approach and social value, outlined above in the context of speculation, may also be valuable to policy makers in other areas, ensuring that the vulnerable are protected and that wider social benefits are considered alongside the potential for wealth creation. Ultimately the creation of a fairer and more sustainable food system is dependent on the creation of economic and financial structures that also consider people and planet alongside profits.

2. Speculation or financialisation?

The Oxford English Dictionary defines speculation as "investment in stocks, property, etc. in the hope of gain but with the risk of loss" (Oxford University Press, undated). As a definition to describe the activities that form the focus of this debate this is overly broad and could include pretty much any investment activity in capital markets. A definition by John Bogle, financial markets expert and founder of a US mutual fund, is more applicable, distinguishing speculation as different from, and in fact the opposite of, investment. For Bogle, investment is about long-term ownership of businesses and the creation of 'intrinsic value' over time. This occurs as businesses produce goods and services that add value to society and increase wealth. By contrast, he defines speculation as short-term trading of *financial instruments* rather than *businesses*, held on the expectation of profit from increased *prices* rather than increased *intrinsic value* (Bogle 2009, pp49-50, italics added).

At the heart of the debate about speculation and food price volatility are the workings of financial 'futures' markets. These markets enable purchasers and others involved in the supply chain of certain agricultural commodities to 'hedge' against the risk that commodity prices will move unfavourably. An element of speculation has always existed in these markets and can play a useful role. Speculators looking to profit from price movements take on the risk of other market participants, provide market information to help set more accurate prices, and provide liquidity that enables markets to operate more efficiently (Angel and McCabe, 2010, p278). As financial speculators usually aim to buy when prices are low and sell when prices are high, they can even be seen as reducing the extremes of commodity prices (De Schutter, 2010, p4).

The debate about food commodities markets, rather than being simply about what might be termed 'traditional' speculation, refers to a broader set of activities undertaken by non-commercial market participants. This ranges from very short-term speculation by high velocity traders, and active trading by hedge funds and other financial players, to longer and more passive engagement by institutional investors looking for exposure to commodities via complex financial products such as commodity index funds. These activities are all focused on achieving a financial return based on changes in commodity futures prices, as opposed to participating in the markets to hedge risk inherent in food production or with regard to the production or distribution of the underlying food commodity. Using Bogle's terms the focus is on price, not value. In keeping with other literature on the topic, this paper will refer to these activities as 'speculation'. However, a more apt term to use might be 'financialisation' as a description of "the increasing influence of financial motives, financial markets and financial actors in the operation of commodity markets" (UNCTAD 2011, p13).

3. Complexity

The current debate is struggling to find a consensus about the extent to which speculation contributes to price volatility or price rises. Given the complex mechanisms at work, definitive proof is very difficult to produce. In order to prove that speculation does contribute to price volatility it must be proven:

- that speculative activity influences prices in financial 'futures' markets for food commodities;
- that prices set in financial futures markets, for the delivery of food commodities at some date in the future, alter the real or spot prices for food commodities traded today;
- that the cause of the impact is speculation rather than the myriad supply and demand conditions that can affect food commodity prices at international, national and local levels.

This task is made harder because there is very little transparency around financial contracts traded 'over the counter' (OTC), bilateral agreements between financial institutions and investors that constitute much of the influx of funds into food commodity markets.

The complexity involved in assessing the impact of speculation means that correlations alone do not provide reliable proof that speculation is a cause. While the correlation of rapidly increasing commodity index fund investment and rapidly rising food commodity prices provides a disturbing picture, it has been difficult to prove beyond any doubt a causal relation between the two. Complexity also means that accounts of the impact of speculation are as dependent on theoretical explanations of how financial and commodity markets work as they are on empirical observations. As economic theory is not immutable fact, the debate about speculation is as much about our beliefs about how the world works as it is about what is really happening on the ground.

4. Burden of proof

Even though consensus in this debate has not been reached, a broad body of research at the very least casts doubt on the view that the massive inflow of funds into food commodity markets is a totally benign influence.

There is no doubt that food commodity markets have been subject to a large influx of funds by financially motivated participants such as swaps dealers, commodity index funds and money managers (FAO, IFAD et al, 2011, p22). Alongside deregulation, which encouraged the growth of OTC derivatives products, commodities have become attractive to investors looking to diversify their portfolios and hedge against inflation (UNCTAD, 2011, p13). Olivier De Schutter, the UN Special Rapporteur on the right to food, argues that in the run-up to the 2007/8 food price crisis, the failure of returns elsewhere in the financial system as a result of the sub-prime crisis increased further the demand for commodities from institutional investors (De Schutter, 2010, pp5-6).

Critics of speculation argue that the massive influx of funds into food commodity markets has had undue impact on prices, causing them to rise higher than they would in response to fundamental supply and demand conditions. Financial institutions are able to use futures markets to hedge the risk they are exposed to as a result of selling commodity-based products to their clients. Exemptions from position limits created by the Commodity Futures Trading Commission to protect the market from manipulation mean that these institutions can assume very large positions that can be more than ten times the size of positions held by other market participants (Masters, 2008; Sanders, Irwin and Merrin, 2008, p8).

Those arguing that speculation is having a significant negative impact come from a broad variety of backgrounds and include economists, hedge fund managers, prominent financiers and businessmen alongside campaigning organisations.[3] In a joint letter organised by the World Development Movement before a recent G20 meeting, over 450 economists including academics from Oxford, Cambridge, and the London School of Economics argued that “Excessive financial speculation is contributing to increasing volatility and record high food prices” and “that prices have moved too much to be based on fundamental supply and demand factors” (WDM, 2011).

At the least it seems that food commodity markets are not behaving as they should. US wheat farmers and elevators are increasingly unable to use futures markets to hedge production and distribution activities (US Senate 2009, pp44-49). A report from UNCTAD observed that commodity markets are becoming increasingly linked to information flows in financial markets, indicating that factors other than supply and demand are driving price movements. Commodities with little in common are starting to move together in response to announcements about economic indicators (UNCTAD, 2011, pviii).

The view that speculation is having a significant impact is not unanimous. As well as economists arguing that there is little evidence that speculation causes harm, some commentators point to the impact of more fundamental factors including stock levels, oil prices, bio-fuels, export restrictions and macro-economics factors.[4] Nevertheless the number of respected commentators arguing that speculation is an issue is significant and calls into question the level of evidence policy makers require before acting. What burden of proof is required? The onus is currently on critics of speculation to prove beyond doubt that harm is caused. Given the potential risk of human suffering, should more energy be expended to confirm that harm is not caused?

[3] For example see Worthy 2011, Christian Aid 2011, Masters 2008, Ghosh 2010, Timmer 2009 p38, Soros 2008, Branson, Masters and Frenk 2008.

[2] For example see Bobenrieth and Wright, 2009; Piesse and Thirtle, 2009, p124; Headey and Fan, 2010, pxv.

5. Economic assumptions

Economic approaches are central in this debate, with academics on both sides of the debate using economic modelling to illustrate how speculative activity influences markets. By making assumptions about how markets work and how people behave, economic models provide a simplified representation of the real world, with the aim of enabling the key mechanisms at work to be identified. Conventional financial theory assumes that markets are characterised by a large number of informed buyers and sellers, and that prices reflect all available information. According to this theory, speculation is unlikely to be a significant influence on commodity prices. If a price moves up from the fundamental value which reflects this information, informed participants would see a profitable opportunity for arbitrage, with their actions stabilising prices back at their fundamental values (Rapsomankis, 2009, p19; Gilbert, 2009, p19).

In reality, predicting the outcome of activities in futures markets is more complicated. Information may not be readily available, and rational behaviour may not entail moving prices back down to a theoretical equilibrium. In futures markets, prices could theoretically be pushed above their fundamental values (set by information about supply and demand conditions), because the information on which trades are based only becomes apparent after a period of time. While futures commodity price increases may cause immediate action in terms of planting crops, there is a lag before this information results in increased grain inventories, and a further delay before these are reflected in the inventory information that would inform the futures market (Lagi et al, 2011, pp5-6). This delay in information could result in so-called herding behaviour, where market participants judge their own information to be incomplete and follow the behaviour of other traders, acting on the belief that others in the market have better information than them (UNCTAD, 2011, p22).

Even where other market actors know that prices are above their fundamental level, they may be limited in the extent to which they engage in arbitrage. This could be a totally rational stance, as there would be a significant risk of loss should prices continue to move upwards against that arbitrage position. As economist Christopher Gilbert points out, "In practice, the informed investors are likely to sit on the sidelines until sense returns to the market since there is no easier way to lose money than to be right but to be right too early" (2010, p4). Traders may even engage in 'positive feedback trading', purchasing contracts in the expectation that others will follow, pushing up the price and enabling them to sell at a profit (UNCTAD, 2011, p22; De Long et al, 1990, p394).

The quantification of herding or positive feedback trading behaviour is difficult, though it has been attempted using econometric modelling (for example see Gilbert, 2010; Tokic, 2011). Observation of market data tells us what trades were made, but doesn't necessarily help in assessing the motivations of traders or the information they actually used to make their decisions. Although less scientific in approach, interviews with market participants are therefore also important in understanding what is driving market activity. Commodity market participants interviewed for a recent UNCTAD report generally felt that financial investors had become more important and could move prices in the short term, thereby increasing volatility (2011, p48).

Although economic models provide a useful way of understanding a complex environment, they are only theoretical, and may not capture the real world characterised by "human beings and their interests, ideologies and normative convictions" (Archer and Fritsch, 2010, p120). Difficulty in quantifying the impact of financial investment, then, does not constitute proof that there is no impact.

6. Towards a precautionary approach

The complexity of this debate means that in all likelihood additional research will not lead to a consensus. Therefore policy approaches that await conclusive proof prior to action may not provide an adequate response to this issue. The current policy discourse is premised on assessing the likelihood that financial speculation causes harm. Yet without a consensus around the evidence, such an assessment is seemingly impossible, and policy inertia is the result. In the absence of conclusive evidence, and given the seriousness of the consequences if speculation does cause harm, the adoption of a more precautionary approach may be advisable.

The precautionary principle is a contested but widely used concept that provides an alternative basis for making decisions about financial speculation. There is no universally agreed definition of the precautionary principle and the wording used to describe it varies. However drawing together examples of the term's use in various

international treaties, the World Commission on the Ethics of Scientific Knowledge and Technology, an advisory body to UNESCO, devised a working definition. It states that "[w]hen human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm." (2005, p14). Risk governance expert Andrew Stirling (2007, p310) argues that whilst a risk-based approach is suitable where there is strong confidence in the assessed outcomes and probabilities, it is not applicable to situations characterized by uncertainty, ambiguity or ignorance. It is in these circumstances that the precautionary principle is valuable in providing guidance by "giv[ing] the benefit of the doubt to the protection of human health and the environment, rather than to competing organizational or economic interests" (Stirling, 2007, p312).

Although controversial, the precautionary principle is widely used by policy makers to protect people and the environment. It is recognised in the field of environmental policy following its inclusion in Principle 15 of the Rio Declaration, which states that a precautionary approach will be applied by states in order to protect the environment (UNCED, 1992). It is also widely used in European settings, with the precautionary principle forming part of the EU's legislative approach to food-related issues such as GM crops, food safety and the Common Fisheries Policy (European Council, 1990; 2002; 2008). The European Commission published a communication in 2000 clarifying how the precautionary principle should be used in EU policy making. Invoking the precautionary principle is seen as an appropriate approach in situations where a hazard is identified but where scientific evaluation does not allow risk to be evaluated with "sufficient certainty", either because of insufficiency of data, or where the nature of the data is imprecise or inconclusive (European Commission, 2000). These conditions appear similar to those apparent in assessing the impact of speculation on food commodity markets.

Adoption of the precautionary principle might apply to financial speculation in food commodity markets in two ways. Firstly, it could be used to reassess the burden of proof required before action is taken, given the high stakes involved in terms of human suffering. In the absence of conclusive evidence, is there sufficient evidence to act? Secondly, it could be used to question who has responsibility for proving that harm is caused. Is the relevant responsibility here to determine beyond doubt that financial activity is causing harm, as is currently assumed, or to determine beyond doubt that *no* harm is caused? In other words, should the onus be on those benefiting from financial investments in food commodity markets to prove that they are not causing harm, rather than on the critics of speculation? A third way of thinking about this is to turn the question around completely. Rather than asking if speculation causes harm, we might ask whether it creates good.

7. Speculation and social value

The debate about the value of speculation is an old one. The economist Amartya Sen argues that Adam Smith, writing in 1776, had in mind speculators seeking excessive risk when he described the activities of "projectors and prodigals" who, given access to capital, "were most likely to waste and destroy it" (Sen, 2010; Smith, 1986, p457). In a critique of financial speculation written in 1902, John A. Ryan, a Catholic theologian and economist, argued that whilst the miller adds utility by turning wheat into flour, and an investor adds utility by providing capital for use in productive business, a speculator "add[s] nothing to the utility of any property" (Ryan, 1902, pp335-6).

Speculation can have an important and socially valuable role in helping markets function efficiently. By participating in commodity markets, speculators take on the risk of producers, enabling them to produce more food than they otherwise would (Angel and McCabe, 2010, pp280-281). They are also seen to provide benefits in terms of aiding price discovery (the interaction between buyers and sellers which determines a markets price), liquidity (the ease with which contracts can be bought and sold) and market deepening (the extent to which the market can absorb a large volume of transactions without this affecting price) (Angel and McCabe, 2010, p281; FSA and HM Treasury, 2009, p35). In other words, the presence of speculators makes it easier for those looking to hedge to find someone to trade with, reduces the transaction cost of trading, and can make the market more stable. Traditional speculators can also ease market volatility, because they tend to buy when prices are low and sell when prices are high (De Schutter, 2010, p4).

One of the main arguments against the imposition of limits to speculative activity is that it may reduce these benefits and harm the operation of commodity markets. In the UK, the Treasury and Financial Services Authority opposes limiting participation in commodity markets, arguing that this is potentially detrimental to

"efficient markets and price formation…" (FSA and HM Treasury, 2009, p35). Yet, while these benefits may apply to traditional forms of speculation, it is more questionable whether they apply to the types of financial activity taking place in food commodity markets on a significant scale. In a recent paper, Lord Turner, Chairman of the UK Financial Services Authority (FSA), questions some of the assumptions held by his own organisation in the run-up to the financial crisis: that financial innovation and market liquidity were always good, and regulation, except in cases of specific market failure, to be avoided (Turner, 2010, p15). Although the subject of his paper is reforming the wider banking system, his insights seem very relevant to the debate around speculation in commodity markets. Similar perspectives, particularly with regard to the benefits of market liquidity, often seem to underpin policy responses (for example see Hoban, 2011).

While recognising the benefits of increased liquidity, Turner argues that the benefit it provides is subject to diminishing marginal returns. In other words, as markets become more liquid, the value added by further liquidity decreases. Additionally in certain markets, the increased number of speculators and position takers required to provide this increased liquidity can have a negative effect itself, leading to momentum type effects. Uncertainty, a lack of information, and complex principal/agent relationships can lead to participants taking rational decisions that contribute to instability in the market as a whole (Turner, 2010, pp39-40). Therefore while speculation can contribute to liquidity, a social good, it is far from clear that this is always beneficial.

While the social value provided by speculation is questionable, the contribution to societal well-being of financial organisations participating in the complex financial markets is also being challenged. In classical economic theory financial intermediaries play a neutral role, connecting buyers with sellers. Yet this does not represent the complex set of relationships that exist in financial markets or describe the activities of a financial sector which has grown over recent decades, such that in the run-up to the financial crisis it provided around 25% of UK corporation tax receipts (Darling, 2011, p7). Paul Woolley of the London School of Economics argues that financial intermediaries actually play a dominant role in setting market prices. When investors participate in financial markets they essentially delegate their involvement to the intermediaries. This asymmetry of information between the financial intermediary and end investor leads to mispricing in the market, but also enables the financial intermediary to extract rents or excessive profits at the expense of the end investor. Rather than providing social good in the form of efficient markets, the asymmetry of information leads to social bad in terms of mispricing and rent seeking (Woolley, 2011, p125, p131). In relation to commodities, Woolley argues that these should be rejected by investors as ultimately they offer a long-term return of less than 0% after financial fees, are subject to herding behaviour, and with regard to commodity indices "can be gamed by the investment banks that maintain them" (Woolley, 2011, p139).

Policy-makers considering whether speculation causes harm might also consider the extent to which the current high levels of speculative activity in food commodity markets are likely to provide value to society at large or even the wider economy. If they do not, shouldn't this have as much bearing on the decision to regulate as the profitability of the banking sector?

8. Financialisation

Speculation in food markets is not an isolated occurrence but should be seen in the context of the wider economic system. Demand for exposure to commodities increased as returns from elsewhere in the financial system dried up, first in property markets and then in stock markets (De Schutter, 2010, p5-6; Lagi et al, 2011, p7). Rather than seeking excessive returns, the motivations of institutional investors during difficult economic times may have been one of risk minimisation and the seeking of any available return.

The need to earn a return is linked to a fundamental need for growth in our economic system. In his book *Prosperity without Growth*, sustainable development expert Tim Jackson talks of a dilemma between economic growth, which is unsustainable, and 'de-growth', which is unstable. Failure to pursue a growth policy currently leads to recession, and consequently losses in livelihoods and wellbeing. Yet the downsides of growth in our current economic system include environmental destruction and the exacerbation of social disparities (Jackson, 2009, pp62-64). The attractiveness of commodities can be seen as reflecting a wider characteristic of our current economic system: that it depends on continual economic growth, seemingly regardless of how that growth is achieved.

The need for growth may provide one of the reasons why the financial services industry has been able to grow to the extent that it can contribute 40% of corporate profits in the UK and the US (Woolley, 2010, p121). Financialisation has seen rapid growth of the financial services sector in relation to the real economy in terms of its share of national income, corporate profits and market capitalization (Turner, 2010, p14).

In the context of the need for growth and the dominance of the financial system, speculation is not an isolated phenomenon. Financial firms are directly engaged in the food system; Warren Buffet's Berkshire Hathaway was until recently the largest investor in Kraft, whilst 3G, a Brazilian private equity firm, purchased Burger King outright (New York Times, 2011; Arnold, Lucas and Bevins, 2010). Even the distinction between food corporations and financial organisations is becoming blurred; the food conglomerate Cargill runs its own asset management company, Black River Asset Management, and may register as a swap dealer in the US derivatives markets, making it subject to similar rules to investment banks (Cargill, undated; Meyer, 2011).

While financialisation is apparent across the food system, perhaps the closest related phenomenon to speculation in commodity markets is the increasing interest in agricultural land as an investment – so-called 'land grabbing'. The rise in commodity prices in 2008, and the decline in investment returns elsewhere, also had the effect of increasing investment interest in agricultural land, particularly in sub-Saharan Africa. Financial companies are attracted by the likely appreciation of land values, the use of land as a hedge against inflation, and the potential for long-term returns (Deininger et al, 2011, pxxv, pxxxii, p2). Emergent Asset Management, a UK based company, reportedly owns or leases 100,000 hectares in Africa and targets annual returns of 25% (Schaffler et al, 2011). Interest is not limited to Africa however, with Galtere, a US-based fund manager, hoping to attract $1billion of investment in a fund focused on agricultural projects in Brazil, Uruguay and Australia (Reuters, 2010).

9. Concluding remarks

Addressing the impact of wider structural economic influences such as dependency of the economy on economic growth and financialisation within the food system is well beyond the scope of this paper, as is any detailed investigation into the impact of financial investors in land. This author's view is that it will be hard for our global food system to meet the needs of people, especially the most vulnerable people, if the driver of powerful interests within it is limited only to investment return. The concepts of a precautionary approach and social value, applied to the speculation debate above, may prove to be useful tools in the wider context of the food sector by providing alternatives to conventional economic arguments, giving the benefit of the doubt to people rather than profit, and considering social values as well as investment return. Ultimately the creation of a fairer and more sustainable food system is dependent on the creation of an economic and financial structure which, in distributing investment funds, recognises these values alongside income generation.

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